

DATA SHEET

Hall Effect Current Sensor

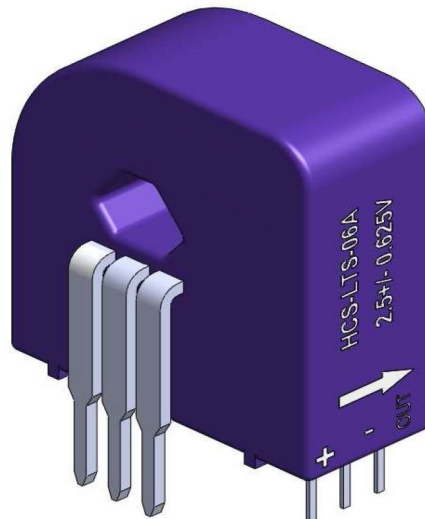
PN : HCS-LTS3

IPN = 6A - 15A- 25A - 50A

Features

- Closed loop
- High accuracy
- Supply voltage : +3,3V DC
- Voltage output
- Through hole primary
- Can be customized

Small PCB mounting
 Very good linearity
 Low power consumption
 Good over-current capability



Applications

Frequency drive control home appliances
 Solar power management system
 Inverter applications
 Uninterruptible power supplies (UPS)
 Current monitoring

ELECTRICAL DATA

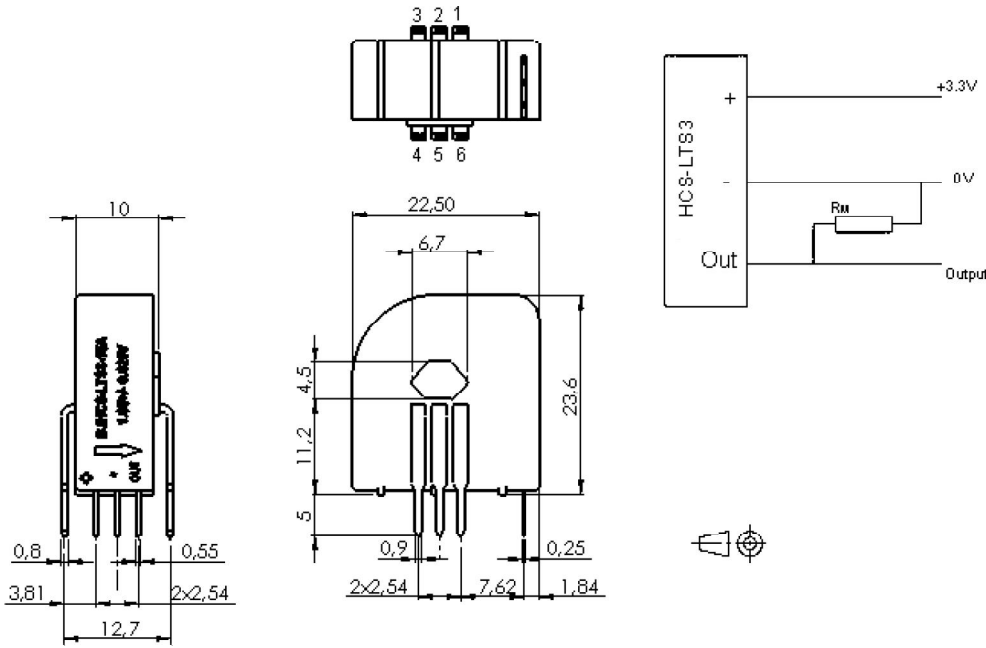
| HCS-LTS3-... | 06A | 15A | 25A | 50A |
|--|-------------------------------|----------|----------|----------|
| Nominal rms current I_{PN} (A) | 6 | 15 | 25 | 50 |
| Sensed current range I_{PM} (A) | ±12 | ±30 | ±50 | ±84 |
| Measuring resistance R_M (Ω) | 100 | 50 | 50 | 25 |
| Number of secondary turns | 960 ± 1 | 1200 ± 1 | 2000 ± 2 | 2000 ± 2 |
| Rated output voltage V_O (V) | $V_{OE} \pm 0,625 \pm 0,05\%$ | | | |
| Supply voltage V_C (Vdc) | $+3,3 \pm 5\%$ | | | |
| Static current consumption I_{CO} (mA) | 10 | | | |

ACCURACY DYNAMIC PERFORMANCE

GENERAL & ISOLATION CHARACTERISTICS

| | | | | | |
|---|----------------------|-------|--------------------------------------|-------------|----|
| Overall accuracy X_G @ I_{PN} , $T=25^\circ\text{C}$ | ± 0,7 | % | Operating temperature | -40 to +85 | °C |
| Zero offset voltage V_{OE} @ $I_P=0$, $T=25^\circ\text{C}$ | 2,5 ^{±0.02} | V | Storage temperature | -40 to +125 | °C |
| Offset voltage drift | ≤ ± 0,5 | mV/°C | Weight | 10 | g |
| Linearity error ϵ_L | ≤ 0,1 | % FS | Insulation voltage (50Hz, 1mn) | 3 | KV |
| di/dt accurately followed | >50 | A/μs | Creepage distance (shell) | 15,4 | mm |
| Response time t_r | < 1 | μs | Impulse withstand voltage (1,2/50μs) | > 8 | KV |
| Bandwidth (-1db) | DC to 200 | Khz | | | |

DIMENSIONS



WIRING DIAGRAM

| Cable hole current (N ^{ber} primary turns) | Nominal current LTS3-... | | | | Output rated (V) | Primary (mΩ) | Primary (μH) | PCB current input (Input Pin Connection) |
|--|--------------------------|------|-------|-------|---------------------|-----------------|-----------------|---|
| | 06A | 15A | 25A | 50A | | | | |
| 1 | ±6 | ±15 | ±25 | ±50 | 1,65 ± 0,625 | 0,18 | 0,013 | in 6-5-4 out 1-2-3 |
| 2 | ±3 | ±7,5 | ±12,5 | ±25 | 1,65 ± 0,625 | 0,81 | 0,05 | in 6-5-4 out 1-2-3 |
| 3 | ±2 | ±5 | ±8,3 | ±16,6 | 1,65 ± 0,625 | 1,62 | 0,12 | in 6-5-4 out 1-2-3 |

Cautions :

- I_S is positive when I_P flows in accordance with the arrow direction (see the side of the sensor);
- Primary conductor temperature should not exceed 100 °C;
- Best dynamic performances (di/dt and response time) are achieved with a single electrical conductor completely filling the through hole;
- To achieve the best magnetic coupling, the primary winding must be wound around the top edge of the sensor.

WARNING : Incorrect wiring may cause damage to the sensor.

HCS-LTS3-25A : Relation between Input Current and Output voltage :

| | | | | | |
|--------------------|------|-------|------|-------|-----|
| Input current (A) | - 50 | - 25 | 0 | 25 | 50 |
| Output voltage (V) | 0,4 | 1,025 | 1,65 | 2,275 | 2,9 |

